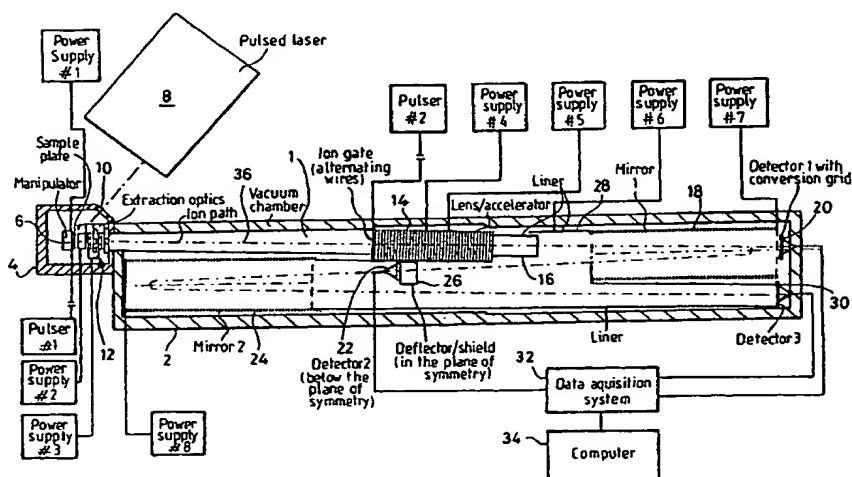




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(54) Title: TIME-OF-FLIGHT MASS SPECTROMETER



(57) Abstract

A time-of-flight mass spectrometer, for example, a MALDI-TOF spectrometer, measures the characteristics of the charge to mass ratio of ionized particles by measuring the time taken for the particles to travel a pre-determined distance. The spectrometer comprises an accelerator (14) which accelerates the particles along at least two paths, which may be contained in a single beam of charged particles. Two detectors (26 and 30) mark the ends of the paths and are operable to detect the particles travelling therealong. The length of the path leading to the first detector (26) differs from that of the path leading to the second detector (30) to a sufficient extent to enable the difference in detection times of corresponding particles at the two detectors to be used to provide a measurement of said characteristics. Variations in initial velocities and/or ionization times of the particles will have similar effect on the outputs of both detectors so that one detector can, in effect, be used to calibrate or correct the output of the other detector.

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